

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A lithium battery separator having a shutdown function and comprising a porous carrier having a porous inorganic nonelectroconductive coating on and in this carrier,

characterized in that

the inorganic coating, which comprises oxidic particles of the elements Al, Si and/or Zr having an average particle size in the range from 0.5 to 10  $\mu\text{m}$ , supports a porous shutdown layer composed of a material which melts at a predetermined temperature and closes the pores of the inorganic layer, the shutdown layer being formed by a porous sheetlike structure and the carrier comprising woven or non-woven polymeric or glass fibers.

Claim 2 (Currently Amended): ~~A separator as per~~ The separator of claim 1,

characterized in that

the shutdown layer is formed by a woven, nonwoven, felt, formed-loop knit or porous film.

Claim 3 (Currently Amended): ~~A separator as per~~ The separator of claim 1 or 2,

characterized in that

the carrier is flexible and less than 50  $\mu\text{m}$  in thickness.

Claim 4 (Original): A separator according to claim 3,

characterized in that

the carrier is a polymeric nonwoven.

Claim 5 (Currently Amended): ~~A separator~~ The separator of claim 1 according to at least one of claims 1 to 4,  
characterized in that  
the polymeric fibers of the carrier are selected from fibers of polyacrylonitrile, polyester and/or polyamide.

Claim 6 (Currently Amended): The separator of claim 1 ~~A separator according to at least one of claims 1 to 5,~~  
characterized in that  
the shutdown layer is from 1 to 20 and preferably from 5 to 10  $\mu\text{m}$  in thickness.

Claim 7 (Currently Amended): The separator of claim 1 ~~A separator as per at least one of claims 1 to 6,~~  
characterized in that  
the shutdown layer consists of a material selected from polymers, polymer blends, natural or artificial waxes or mixtures thereof.

Claim 8 (Currently Amended): The separator of claim 1 ~~A separator as per at least one of claims 1 to 7,~~  
characterized in that  
the shutdown layer consists of a material which has a melting temperature of less than 130°C.

Claim 9 (Currently Amended): The separator of claim 1 A separator as per at least one of claims 1 to 8,

characterized in that

the material of the shutdown layer and at least portions of the material of the carrier are identical.

Claim 10 (Original): A process for producing a separator having a shutdown function,

which comprises

a porous inorganic layer of a separator having applied to and fixed on it a porous sheetlike structure as a porous layer (shutdown layer) composed of a material which has a defined, desired melting temperature which is not more than the melting temperature of the carrier material and less than the melting temperature of the inorganic layer.

Claim 11 (Canceled).

Claim 12 (Currently Amended): The process of claim 10 A process according to claim 10 or 11,

wherein

the porous inorganic layer is hydrophobicized before the shutdown layer is applied to it.

Claim 13 (Currently Amended): The process of claim 10 A process as per any one of claims 10 to 12,

wherein

the porous inorganic layer is treated with an adhesion promoter before the shutdown layer is applied to it.

Claim 14 (Original): A process according to claim 13,

wherein

the porous inorganic layer is produced by using a polymeric sol comprising a silane adhesion promoter for the shutdown layer to be applied later.

Claim 15 (Currently Amended): The process of claim 13 A process as per either of claims 13 and 14,

wherein

the adhesion promoter is selected from hydrolyzed or nonhydrolyzed functionalized alkyltrialkoxysilanes.

Claim 16 (Currently Amended): The process of claim 10 A process according to at least one of claims 10 to 15,

wherein

the shutdown layer is created by applying a woven, formed-loop knit, felt, nonwoven or porous film to the porous inorganic layer.

Claim 17 (Currently Amended): The process of claim 10 A process according to at least one of claims 10 to 16,

wherein

the shutdown layer applied to the porous inorganic layer is heated once to a temperature above 50 and below the melting temperature of the material of the shutdown layer so that the shutdown layer are adhered to the separator via the adhesion promoters.

Claim 18 (Currently Amended): The process of claim 10 A process according to at least one of claims 10 to 16,

wherein

the shutdown layer applied to the porous inorganic layer is fixed by single heating to a temperature above the glass transition temperature to incipiently melt the material without changing the actual shape.

Claim 19 (Currently Amended): The process of claim 10 A process according to at least one of claims 10 to 17,

wherein

the shutdown layer is applied to the porous inorganic layer by laminating.

Claim 20 (Currently Amended): The processs of claim 10 A process according to at least one of claims 10 to 16,

wherein

the shutdown layer is applied to the porous inorganic layer and fixed by being trapped in a coil wound during battery fabrication.

Claim 21 (Currently Amended): The process of claim 10 A process according to at least one of claims 10 to 20,

wherein

the material for the shutdown layer is selected from polymers, polymer blends, natural and/or artificial waxes to have a melting temperature of less than 180°C.

Claim 22 (Currently Amended): A process according to claim 21,

wherein

the shutdown material used is polyethylene (~~wax~~).

Claim 23 (Currently Amended): The use of ~~a separator as per at least one of claims 1 to 9~~ the separator of claim 1 as a separator in lithium batteries.

Claim 24 (Currently Amended): A battery comprising the separator of claim 1 a ~~separator as per at least one of claims 1 to 9~~.